Akad. der Wissensch. 1. Abth. Juli-Heft. Jahrg. 1880.) pp. 29, 6 plates. From the author.

Topographical and Geological Atlas of the district of the High Plateau of Utah, to accompany Report of Capt. C. E. Dutton. (Dep. Int. U. S. Geol. and Geog. Surv. Rocky Mountain Region.) Atlas, 8 sheets. New York, 1879. From the survey.

Contributions to the anatomy of the genus Pentremites, with description of new species. By Dr. G. Hambach. (From Trans. St. Louis Acad. of Sciences). 8vo, pp. 16, 2 plates. From the author.

Etude Stratigraphique et Paléontologique des Terrains Jurassiques du Portugal par Paul Choffat. 4to, pp. 12, 72. Première Livraison. Lisbon, 1880. From the author.

Mémoire sur les Poissons Fossiles des lignites de Sieblos. T. C. Winkler, pp. 24, 2 plates.

Description de Quelque Restes de Poissons Fossiles des terrains triassiques des environs de Wirzbourg. T. C. Winkler, pp. 41, plate, 5.

Note sur Quelques Dents de Poissons Fossiles de l'oligocene inférieur et moyen du Limbourg. Par T. C. Winkler. pp. 12. (Three Extracts of the Archives de Musée Teyler, Vol. v, Livr. 2). Harlem, 1880. From the author.

Anales del Museo Nacional de México. Tome 2. 4to, pp. 57, 3 plates. From the museum.

Spolia Atlantica. Bidrag til Kundskab om Formforandringer hos Fiske under deres Vœxt og Udvikling særligt hos nogle af Atlanterhavets Hjsfiske af Dr. Chr. Lütken. (Ext. Vidensk. Selsk. Skr. 5. Rœkke, natur. og math. Afd. XII, 6). 4to, pp. 198, 5 plates. Copenhagen, 1880. From the author.

——:o:——

GENERAL NOTES.

BOTANY.[1]

THE BOTANY OF A CITY SQUARE.—Manhattan Square, in New York city, comprises a desolate and broken area of eighteen acres on the west side of Central Park, at Seventy-seventh street and Eighth avenue. It presented, a year ago, the appearance of a basin with an irregular marginal shelf of higher ground and with a ridge of gneissoid rocks running in from its south-eastern corner, upon whose summit stood the American Museum of Natural History. It was otherwise varied by artificial mounds formed of huge gneiss blocks split and blasted off from the original hill which rose up where the museum now stands, and its sides, in many places presented steep banks formed from similar fragments confusedly heaped up in precipitous and jagged piles. The lowest part of this ground was covered by a stagnant pond whose periodical putrescence became both offensive and dangerous. With the bare shoulders of rock protruding in naked bosses here and there, the general aspect of the square was particularly forlorn and unfortunate. The complaint of the health officers in conjunction with a revival of the original intentions to make this spot an appropriate outlier of Central Park, both healthy and attractive, resulted in some municipal efforts to secure these ends. Earth was carted in, the sightless slopes of stone were covered over, the pond filled up, the bare tables of rock hidden, and an attempt made to change the abrupt and angular outlines into

[1] Edited by PROF. C. E. BESSEY, Ames, Iowa.

smooth and graceful contours. Whether the results secured were at all proportionate to the time and money expended, is one of those public problems whose solution is best referred to the professional politician. Certainly one result, not aimed at, was to introduce into the square an army of plants whose luxuriant and rapid growth soon covered it with a mantle of waving weeds. Curious to ascertain how many plants flourished upon this limited and forbidding area, the author, at such times as he was at liberty to collect them, began a systematic search over it, and although conscious that want of time interfered with its completeness, yet its extent has caused some surprise, and may prove of interest to a wider circle of students and collectors.

It may be premised for the information of those to whom Manhattan Square, in New York city, is a *terra incognita*, that the immediate district about it is a representative purlieu of a great city, where clusters of shanties alternate with half-finished blocks of handsome houses or stores, the whole a transition phase to a larger and denser population. Not twenty blocks away the closely built up blocks of the city are seen, and Manhattan Square itself may soon be surrounded by sandstone and marble dwellings, and every trace of vegetable existence, except such as shall distinguish or decorate it, be exterminated. The semi-alluvial bottoms of some of the pit-like depressions, and the fertile blanket of soil lying over the low swells of rock in the neighborhood, have been appropriated by squatters for kitchen gardens, and assume in summer an almost rural aspect. The following is a catalogue of the plants collected in Manhattan Square, New York city, in the summer of 1880:

Ranunculaceæ.

Ranunculus acris.

Cruciferæ.

Sisymbrium officinale, Capsella bursa-pastoris,
" canescens, Lepidium virginicum.
Brassica nigra,

Hypericaceæ.

Hypericum perforatum.

Caryophyllaceæ.

Silene inflata (A. Woodward) 1 specimen, Stellaria media,
" noctiflora, one specimen. Mollugo verticillata.

Portulacaceæ.

Portulaca oleracea.

Malvaceæ.

Malva rotundifolia, Abutilon avicennæ.

Geraniaceæ.

Geranium carolinianum, Oxalis stricta.
Impatiens fulva,

Simarubaceæ.

Ailanthus glandulosus.

Anacardiaceæ.

Rhus glabra, Rhus toxicodendron.

Vitaceæ.

Ampelopsis quinquefolia.

Leguminosæ.

Trifolium agrarium,
" pratense,
" repens,
Melilotus alba,
Apios tuberosa.

Rosaceæ.

Potentilla argentea,
" canadensis,
Fragaria vesca,
Rubus canadensis,
" villosus.

Crassulaceæ.

Penthorum sedoides.

Onagraceæ.

Epilobium palustre, var. lineare,
Œnothera biennis.

Umbelliferæ.

Daucus carota.

Caprifoliaceæ.

Sambucus canadensis.

Compositæ.

Vernonia noveboracensis,
Eupatorium perfoliatum,
Aster simplex,
" novæ angliæ,
" ericoides,
" tradescanti,
" multiflorus,
" acuminatus,
Erigeron canadense,
Solidago canadensis,
" nemoralis,
" tenuifolia,
Ambrosia artemisiæfolia,
Xanthium strumarium,
Helianthus annuus,
Bidens cernua,
Bidens frondosa,
" chrysanthemoides,
Leucanthemum vulgare,
Achillea millefolium,
Galinsoga parviflora,
Maruta cotula,
Gnaphalium decurrens,
Antennaria margaritacea,
Cirsium arvense,
" lanceolatum,
Lappa officinalis,
Cichorium intybus,
Lactuca canadensis,
" scariola,
Mulgedium acuminatum,
Taraxacum dens-leonis.

Campanulaceæ.

Campanula rapunculoides,

Plantaginaceæ.

Plantago major.

Bignoniaceæ.

Catalpa bignonioides.

Scrophulariaceæ.

Verbascum blattaria,
" thapsus,
Linaria vulgaris,
Mimulus ringens,
Veronica sp. ?

Verbenaceæ.

Verbena urticifolia,
Verbena hastata.

Labiatæ.

Lycopus europæus, var. sinuatus,
Salvia lyrata, one specimen,
Collinsonia canadensis,
Nepeta glechoma,
Brunella vulgaris,
Scutellaria lateriflora,
Leonurus cardiaca.

Convolvulaceæ.

Convolvulus arvensis,
Ipomæa purpurea.

Solanaceæ.

Solanum nigrum,
Datura tatula,
Datura stramonium.

Asclepiadaceæ.

Asclepias cornuti.

Phytolaccaceæ.

Phytolacca decandra.

Chenopodiaceæ.

Chenopodium urbicum ?
" ambrosioides,
" botrys,
Chenopodium album,
Atriplex patula, var. hastata.

Amarantaceæ.

Amarantus caudatus,
" albus,
Amarantus retroflexus.

Polygonaceæ.

Polygonum orientale,
" persicaria,
" hydropiper,
" acre,
" aviculare, var. erectum,
Polygonum pennsylvanicum,
" dumetorum, var scandens
" sagittatum,
Rumex crispus,
" acetosella.

Euphorbiaceæ.

Euphorbia maculata,
Acalypha virginica.

Cannabineæ.

Cannabis sativa.

Smilaceæ.

Smilax rotundifolia.

Cyperaceæ.

Cyperus strigosus.

Filices.

Aspidium spinulosum ?
Onoclea sensibilis.

The great body of the recently introduced plants are made up of the Amaranths, Chenopodia, Ambrosiæ, Atriplex, Polygona, especially *P. orientale*, Erigeron, and Datura. These attained surprising proportions, and both in size and numbers resembled diminutive forests. Many of the wilder species doubtless were here previous to its present occupancy, and the water-loving plants remained in the moist precincts of the old partially obliterated pond. The Gramineæ, about five species, were omitted.—*L. P. Gratacap.*

A Dispermous Acorn.—In a collection of acorns of *Quercus prinus* Linn. var. *monticola* Michx., found near Diamond Hill quarry, R. I., I noticed one much larger than the others, which were all large, even for the species. I put these acorns in a little paper box in a drawer which I keep for such fruits. In a few days the warmth of the room caused it to germinate, when I noticed two radicles protruding. I then removed the acorn to a bit of perforated cardboard above a tumbler of water, and watched the growth. Afterwards I made a dissection and found, as I expected, two equally developed seeds, each separable into its own two cotyledons, as shown by the accompanying figures. It will be remembered that the ovary of the oak is three-celled and six-ovuled, and that in ripening only one cell remains, and this is filled by one seed. Here two have been equally developed. I find in Masters' Teratology the same thing recorded of Corylus, but nothing is said of Quercus, hence it may be well to record this instance. This phenomenon must not be confounded with poly-embryony, or multiplication of embryos in *one seed*, as in Citrus. In this case while we see an abnormality indeed, it

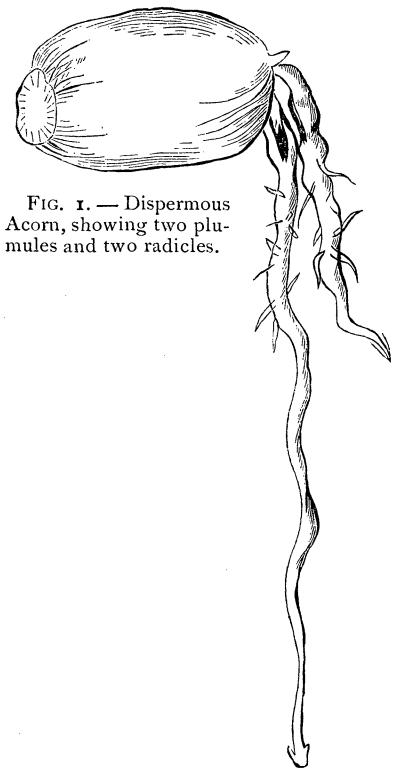

FIG. 1. — Dispermous Acorn, showing two plumules and two radicles.

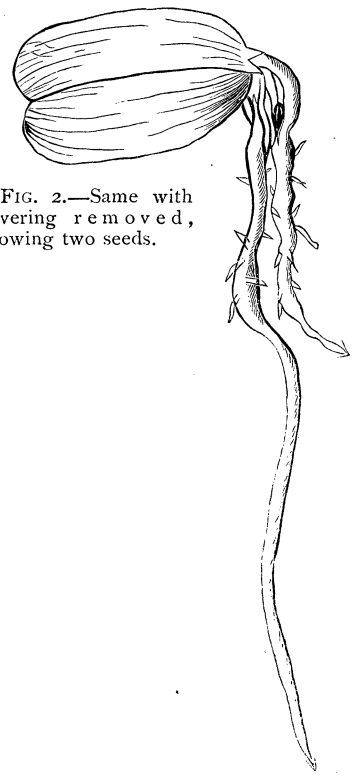

FIG. 2.—Same with covering removed, showing two seeds.

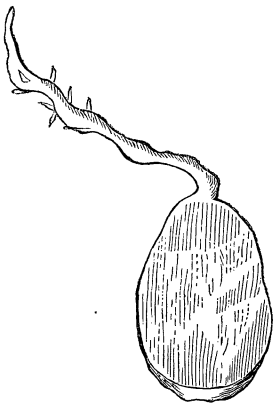

FIG. 3.—One seed removed.

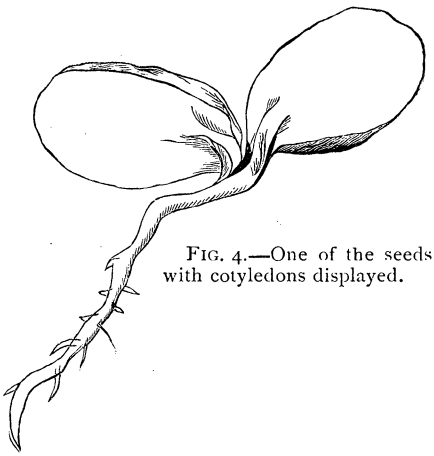

FIG. 4.—One of the seeds with cotyledons displayed.

results merely from the retention in the fruit of some of the parts seen in the ovary, but usually obliterated afterwards.—*W. W. Bailey, Providence, R. I., Oct. 15, 1880.*

BOTANICAL NOTES.—In the prospectus of the *Botanical Gazette* for 1881, the editor takes strong ground in favor of more physiological work, and "would gladly devote half of its space" to papers and notes in this department of Botany. It is to be hoped that the editor may succeed in his laudable undertaking. It certainly is high time that we have a botanical journal in this country devoted entirely to such work.——A very useful "Synoptical Table for the Determination of Fibers of Vegetable Origin" is published in the August-September number of the *Botanical Gazette.* It is from Vetellart's work, "Sur les fibres employes dans l'industrie."——In the September "Torrey Botanical Bulletin," John Williamson contributes a readable account of the "Ferns on the Cumberland." The discovery of *Adiantum capillus-veneris* in Southern Kentucky was confirmed.——A new and enlarged edition of Rattan's "Popular California Flora" has just appeared, from the house of Bancroft & Co., of San Francisco. It will prove quite valuable to the beginners in botany in central California. Many of the more difficult orders, as for example, the Coniferæ, Gramineæ, Cyperaceæ, Salicaceæ, Compositæ, etc. are entirely omitted as too hard for the beginner.——The second volume of the "Botany of California," by Sereno Watson, has just appeared. It will be noticed more fully hereafter.——In the *American Journal of Science and Arts* for October, Dr. Gray briefly notices two recent Swedish contributions to Pomology. One of these records the results of trials made of varieties of apples and other fruits, with a view to determining the northern limit of their hardiness. More than eight hundred varieties were tried, the investigation extending over a period of twelve years. Our American fruit growers would doubtless do well to acquaint themselves with these works.——The more important articles in Caruel's *Nuovo Giornale Botanico Italiano* for July, are by Jatta on the lichens of Central Italy; Macchiati, on the periodical spontaneous movements of the stamens of *Ruta bracteosa* and *Smyrnium rotundifolium* and Cugni on the germination of oily seeds. ——The "Catalogue of Pacific Coast Fungi," by Dr. Harkness and J. P. Moore, published under the direction of the California Academy of Sciences, is a most creditable one. The only other State in the country (for this catalogue is practically confined to California), whose fungi have been as fully catalogued is North Carolina, Dr. Curtis having done for his State in 1867, what the authors of the present catalogue have in 1880 done for theirs.

ZOOLOGY.[1]

THE METAMORPHOSIS OF ACTINOTROCHA.[2]—Schneider first showed that the larva (Actinotrocha) of the Gephyrean, Phoronis,

[1] The departments of Ornithology and Mammalogy are conducted by Dr. ELLIOTT COUES, U. S. A., Washington, D. C.

[2] Abstract of a paper read before the American Association for the Advancement of Science, in Boston, August, 1880.